

CLAIMS

11. Claims 1-38 (canceled). New Claims 39-59 submitted.

Claim 39 A method of separating a substance from a non-atomically bonded combination or mixture of substances, comprising;

utilizing at least one organic chemical reaction to alter the molecular structure and alter at least one physical characteristic of a substance other than a polypeptide or an enzyme by adding at least one atom to the molecular structure of said substance other than a polypeptide or an enzyme, or by removing, without dissolving or digesting, at least one atom from the molecular structure of said substance other than a polypeptide or an enzyme,

utilizing a mechanical means of separation, other than froth flotation, that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from said non-atomically bonded combination or mixture of substances,

impacting said non-atomically bonded combination or mixture of substances that contains said substance other than a polypeptide or an enzyme with said at least one organic chemical reaction to alter the molecular structure and alter at least one physical characteristic of said substance other than a polypeptide or an enzyme by adding at least one atom to the molecular structure of said substance other than a polypeptide or an enzyme, or by removing, without dissolving or digesting, at least one atom from the molecular structure of said substance other than a polypeptide or an enzyme,

reacting said at least one organic chemical reaction that alters the molecular structure and alters at least one physical characteristic of said substance other than a polypeptide or an enzyme, by adding at least one atom to the molecular structure of said substance other than a polypeptide or an enzyme, or by removing, without dissolving or digesting, at least one atom from the molecular structure of said substance other than a polypeptide or an enzyme with said non-atomically bonded combination or mixture of substances that contains said substance other than a polypeptide or an enzyme which does alter the molecular structure and does alter a physical characteristic of said substance other than a polypeptide or an enzyme that is in said non-atomically bonded combination or mixture of substances, and

separating said substance other than a polypeptide or an enzyme with altered molecular structure and altered at least one physical characteristic from said non-atomically bonded combination or mixture of substances by utilizing said mechanical means of separation that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from said non-atomically bonded combination or mixture.

Claim 40. A method of separating a substance from a non-atomically bonded combination or mixture of substances, comprising;

utilizing at least one organic chemical reaction to alter the molecular structure and alter at least one physical characteristic of said substance by removing, without dissolving or digesting, at least one atom from the molecular structure of said substance,

utilizing a mechanical means of separation, other than froth flotation, that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from said non-atomically bonded combination or mixture of substances absent a chemical reaction,

impacting said non-atomically bonded combination or mixture of substances that contains said substance with said at least one organic chemical reaction to alter the molecular structure and alter at least one physical characteristic of said substance by removing, without dissolving or digesting, at least one atom from the molecular structure of said substance,

reacting said at least one organic chemical reaction that alters the molecular structure and at least one physical characteristic of said substance by removing, without dissolving or digesting, at least one atom from the molecular structure of said substance with said non-atomically bonded combination or mixture of substances that contains said substance which does alter the molecular structure of said substance and does alter a physical characteristic of said substance that is in said non-atomically bonded combination or mixture of substances, and

separating said substance with altered molecular structure and altered at least one physical characteristic from said non-atomically bonded combination or mixture of substances by utilizing said mechanical means of separation, other than froth flotation, that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from said non-atomically bonded combination or mixture absent a chemical reaction.

Claim 41. A method of separating cellulose from a non-aqueous non-atomically bonded combination or mixture of substances, comprising;

utilizing at least one organic chemical reaction to alter the molecular structure of cellulose and alter at least one physical characteristic of cellulose by adding at least one atom to the molecular structure of cellulose,

utilizing a mechanical means of separation that uses at least one differing physical characteristic of matter to physically change the place or position of matter that removes or isolates the matter from a non-atomically bonded combination or mixture of substances,

impacting said non-aqueous non-atomically bonded combination or mixture of substances that contains cellulose with said at least one organic chemical reaction to alter the molecular structure and alter at least one physical characteristic of the cellulose by adding at least one atom to the molecular structure of the cellulose,

reacting the cellulose contained in said non-aqueous non-atomically bonded combination or mixture of substances with said at least one organic chemical reaction to alter the molecular structure and alter at least one physical characteristic of the cellulose that does alter the molecular structure and does alter at least one physical characteristic of the cellulose by adding at least one atom to the molecular structure of the cellulose, and

separating the cellulose with the altered molecular structure and the altered at least one physical characteristic from said non-aqueous non-atomically bonded combination or mixture of substances by using said mechanical means of separation that uses the altered at least one physical characteristic of the cellulose to physically change the place or position of the altered cellulose that removes or isolates the altered cellulose from said non-aqueous non-atomically bonded combination or mixture of substances.

Claim 42. The method of claim 39 comprising, using another one or more organic chemical reactions to reconstruct the altered molecular structure and the altered at least one physical characteristic of said substance other than a polypeptide or an enzyme to the original molecular structure and to the original state of the at least one physical characteristic of said substance other than a polypeptide or an enzyme that existed prior to the separation by said mechanical means of separation.

Claim 43. The method of claim 39 comprising, using a mechanical means of separation prior to reacting said at least one chemical reaction that alters the molecular structure and alters at least one physical characteristic of said substance other than a polypeptide or an enzyme, by adding at least one atom to the molecular structure of said substance other than a polypeptide or an enzyme, or by removing, without dissolving or digesting, at least one atom from the molecular structure of said substance other than a polypeptide or an enzyme with said non-atomically bonded combination or mixture of substances which does alter the molecular structure and does alter a physical characteristic of said substance other than a polypeptide or an enzyme that is in said non-atomically bonded combination or mixture of substances.

Claim 44. The method of claim 39 comprising, using a organic chemical reaction to alter the molecular structure of matter and to alter the specific gravity of matter in said non-atomically bonded combination or mixture of substances by removing at least one atom from the molecular structure of the matter.

Claim 45. The method of claim 39 comprising, using specific gravity flotation as the mechanical means of separation that utilizes at least two different liquids each having a different specific gravity.

Claim 46. The method of claim 39 comprising, using magnetic attraction as the mechanical means of separation.

Claim 47. The method of claim 40 comprising, using another one or more organic chemical reactions to reconstruct the altered molecular structure and the altered at least one physical characteristic of said substance to the original molecular structure and to the original state of the at least one physical characteristic of said substance that existed prior to the separation by said mechanical means of separation.

Claim 48. The method of claim 40 comprising, using a mechanical means of separation prior to reacting said at least one organic chemical reaction that alters the molecular structure and at least one physical characteristic of said substance by removing, without dissolving or digesting, at least one atom from the molecular structure of said substance with said non-atomically bonded combination or mixture of substances which does alter the molecular structure and does alter a physical characteristic of said substance that is in said non-atomically bonded combination or mixture of substances.

Claim 49. The method of claim 40 comprising, using a organic chemical reaction to alter the molecular structure of matter and to alter the specific gravity of matter in said non-atomically bonded combination or mixture of substances by removing, without dissolving or digesting, at least one atom from the molecular structure of the matter.

Claim 50. The method of claim 40 comprising, using specific gravity flotation as the mechanical means of separation that utilizes at least two different liquids each having a different specific gravity.

Claim 51. The method of claim 40 comprising, using magnetic attraction as the mechanical means of separation.

Claim 52. The method of claim 41 comprising, using another one or more organic chemical reactions to reconstruct the cellulose with the altered molecular structure and the altered at least one physical characteristic to the original molecular structure of the cellulose and to the original state of the at least one physical characteristic of the cellulose that existed prior to the separation by said mechanical means of separation.

Claim 53. The method of claim 41 comprising, using a mechanical means of separation prior to reacting the cellulose contained in said non-aqueous non-atomically bonded combination or mixture of substances with said at least one organic chemical reaction to alter the molecular structure of the cellulose and alter at least one physical characteristic of the cellulose that does alter the molecular structure and does alter at least one physical characteristic of the cellulose by adding at least one atom to the molecular structure of the cellulose.

Claim 54. The method of claim 41 comprising, using a organic chemical reaction to alter the molecular structure of the cellulose and to alter the specific gravity of the cellulose in said non-aqueous non-atomically bonded combination or mixture of substances by adding at least one atom from the molecular structure of the matter.

Claim 55. The method of claim 41 comprising, using specific gravity flotation as the mechanical means of separation that utilizes at least two different liquids each having a different specific gravity.

Claim 56. The method of claim 41 comprising, using magnetic attraction as the mechanical means of separation.

Claim 57. The method of claim 41 comprising, using said at least one organic chemical reaction to alter the molecular structure and to alter at least one physical characteristic of cellulose by adding a ketone compound or an aldehyde compound to the molecular structure of cellulose.

Claim 58. The method of claim 41 comprising, reacting cellulose that has carboxylic acid groups on the cellulose molecule from a previous oxidation reaction with an alcohol compound that bonds to the carboxylic acid groups on the cellulose molecule.

Claim 59. The method of claim 41 comprising, using at least one organic chemical reaction to alter the molecule structure of cellulose and remove lignin from the intermolecular bond with cellulose without forming a carboxylic acid group or a ketone group on the cellulose.